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ABSTRACT

This brief focuses on the word identification strategy component of the Strategic Instruction Model (SIM) and reviews recent research showing the effectiveness of this strategy for secondary students with disabilities. The word identification strategy is intended to help struggling readers decode and identify unfamiliar words and is based on the common underlying structure of most polysyllabic words in English. Most of these words can be pronounced by identifying the components of the words (prefixes, suffixes, and stems) and then applying three syllabication rules to the stem word. The seven steps of the process are remembered by using the first-letter mnemonic, DISSECT, and include: (1) Discover the context; (2) Isolate the prefix and draw a box around it; (3) Separate the suffix and draw a box around it; (4) Say the stem; (5) Examine the stem and divide the stem into small, pronounceable word parts; (6) Check with someone, such as a teacher, parent, or other person; and (7) Try the dictionary. The instructional methodology used in teaching the SIM strategy is then explained and results from two research projects investigating the word identification strategy are provided. Results indicate students who were taught the strategy showed greater reading gains. (Contains 11 references.) (CR)

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NCSET Research to Practice Brief

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Improving Word Identification Skills Using Strategic Instruction Model (SIM) Strategies

By Christine D. Bremer, Ann T. Clapper, and Donald D. Deshler

Introduction

Students with learning disabilities often move into secondary education with elementary-level reading skills, including an inability to readily decode unfamiliar words. As a result, they have difficulty with content-area classes, such as history and science, in which grade-level reading is required. This brief focuses on the Word Identification Strategy component of the Strategic Instruction Model (SIM) (Deshler & Schumaker, 1988), and reviews recent research showing the effectiveness of this strategy for secondary students with disabilities.

The Strategic Instruction Model (SIM)

The Strategic Instruction Model (SIM), introduced by Deshler and Schumaker (1988) and further developed by several researchers at the University of Kansas, is an instructional system designed to help students with learning disabilities succeed in their general education courses. SIM includes curricular materials revised to accommodate different learning styles, routines for teachers to help them meet the needs of diverse learners, and strategies for students. Within SIM, there are learning strategies related to six areas: reading, storing and remembering information, expressing information, demonstrating competence, social interaction, and mathematics.

SIM Reading Strategies

There are four SIM strategies specifically related to reading:

1. Paraphrasing (students express main idea and details in their own words);
2. Self questioning (students develop questions concerning reading passages and read to find answers);
3. Visual imagery (students visualize scenes in detail); and
4. Word identification (students decode unfamiliar words by using context clues and word analysis).

The Word Identification Strategy

The Word Identification Strategy used in SIM was developed by Lenz and Hughes (1990) and initially tested on 12 middle school students with learning disabilities. This strategy is intended to help struggling readers decode and identify unfamiliar words, and is based on the common underlying structure of most polysyllabic words in English. Most of these words can be pronounced by identifying the components of

the words (prefixes, suffixes, and stems) and then applying three syllabication rules to the stem word. In this approach, prefixes and suffixes are loosely defined as recognizable groups of letters that the student can pronounce.

As described by Lenz and Hughes (1990), there are seven steps to identifying an unknown word. The steps are remembered using the first-letter mnemonic, DISSECT:

Step 1: Discover the context. This step requires the student to skip over the unknown word and read to the end of the sentence. Then, the student uses the apparent meaning of the sentence to guess what word might best fit. If the guess does not match the unknown word, the student moves on to the next step.

Step 2: Isolate the prefix. In this step, students look for a pronounceable sequence of letters at the beginning of the word. Students are taught a list of prefixes to facilitate recognition. If a prefix is identified, the student draws a box around it to separate it visually from the rest of the word (for example, *in*activity, *under*achievement).

Step 3: Separate the suffix. Using a procedure similar to Step 2, the student boxes off the suffix, if there is one (*inactivity*, *under*achieve*ment*).

Step 4. Say the stem. The student attempts to pronounce the stem (*activ*, *achieve*). If the stem cannot be named, the student moves on to Step 5.

Step 5: Examine the stem. In this step, the student divides the stem into small, pronounceable word parts, using "the Rules of Twos and Threes" (Lenz & Hughes, 1990, p. 151). The rules can be summarized as follows:

Rule 1: If the stem or part of the stem begins with a vowel, separate the first two letters; if it begins with a consonant, separate first three letters; continue to apply this rule until the end of the stem is reached (*ac\tiv*, *ac\hie\ve*).

Rule 2: If you can't make sense of the stem after using Rule 1, take off the first letter of the stem and use Rule 1 for the remainder of the stem (*a\chi\e\v\e*).

Rule 3: When two vowels are together, use what you know about pronunciation (for example, pronounce two adjacent vowels as a single sound, and remember that a final *e* following a consonant is usually silent) and try the different possibilities (*a\chīv*, *a\chēv*).

Step 6: Check with someone. The student checks with a teacher, parent, or other person.

Step 7: Try the dictionary. The student looks up the word, uses pronunciation information to pronounce the word, and, if the word is unfamiliar, reads the definition.

Lenz and Hughes (1990) recommend that the strategy be fully employed only for those words that are most critical to understanding a passage of text, such as a word in a chapter heading. Bryant, Vaughn, Linan-Thompson, Ugel, Hamff, & Hougen (2000) note that this strategy works best when the word being analyzed is one that is already in the student's listening vocabulary.

Instructional Methodology

The instructional methodology used in teaching SIM strategies involves eight stages, with the following goals: (a) obtain a pre-training measure of students' skills and gain the students' commitment for learning; (b) make the students aware of the strategy steps, where the strategy can be applied, and how the strategy will benefit them; (c) demonstrate for students how to use the strategy; (d) ensure that students understand and can name the strategy steps; (e) ensure that students master the use of the strategy in simplified materials or situations; (f) ensure that students master the use of the strategy in materials and situations similar to those encountered in general education classes; (g) obtain a post-training measure of students' skills; and (h) ensure that the students generalize the use of the strategy to general education classes (Ellis, Deshler, Lenz, Schumaker, & Clark, 1991).

The materials and procedures to be used by the learning specialist in these undertakings have been empirically validated in a series of studies (e.g., Hughes & Schumaker, 1991; Lenz & Hughes, 1990; Schmidt, Deshler, Schumaker & Alley, 1989).

Some of the materials have been published for teachers' use (e.g., Lenz, Schumaker, Deshler, & Beals, 1984; Schumaker, Deshler, & Denton, 1984; Van Reusen, Bos, Schumaker, & Deshler, 1987).

Recent Research on the Word Identification Strategy

Recent research by Woodruff, Schumaker, and Deshler (2002) has added to the evidence that the Word Identification Strategy helps struggling secondary readers improve their reading skills. In Michigan in 1998, teachers undertook a research project in which approximately 600 ninth grade students in one high school served as a treatment group and a group of ninth-grade students at another high school served as a comparison group. Both groups were pre-tested using the Slossen Diagnostic Screening Test for Reading using the

Practitioner Perspectives

Cathy Spriggs is an Instructional Facilitator at Turlock Junior High in Turlock, California. She agreed to be interviewed for this NCSET Brief.

On the relationship between word identification and comprehension . . .

We turned word identification into a routine that could be used in a large class setting, and then coupled it with a comprehension strategy. What we found in our school was that the students were fairly good decoders, but their comprehension was very, very poor. We discovered that they didn't know they were supposed to be doing something in their minds when they were reading. They just read the words and didn't process them. So we started teaching them about what good readers do as they're reading, and how to pull out the main idea and the details.

On the impact of the Word Identification Strategy on more proficient readers . . .

Right now, we're working with a group of students who were put into a medium level language arts class. Most of them were at least two years below grade level in their reading scores, and there was quite a range of decoding and comprehension skills. But we decided to go ahead and teach the decoding strategy to everybody, because we had so many students in the group who really needed it.

What's really interesting is that some of the students who had fairly good reading skills have told us that they are using the DISSECT strategy in their science and social studies classes. These students were the hardest sell, because they'd say, "Why am I doing this anyway? I'm already a pretty good decoder." So we've been pleased that they recognized situations where they needed to use the strategy and it helped them. So I don't feel like we wasted their time. I think that was important, because they were wondering, "Is this going to be useful or not?"

On the challenges of using SIM . . .

If there's anything that's on the "down side," it's that it takes time to learn how to implement the pieces. The "up side" is that you learn how to be a really great teacher, and that is what has come out of my involvement with SIM. I have become a much better teacher, because I have a really good understanding of what I have to do from beginning to end to help students learn. I need to describe. I need to model. I need to practice. I have to have varying levels of practice. So you really learn how to do that. But it's not going to happen in a year. It's going to take probably two or three years, but it's worth it.

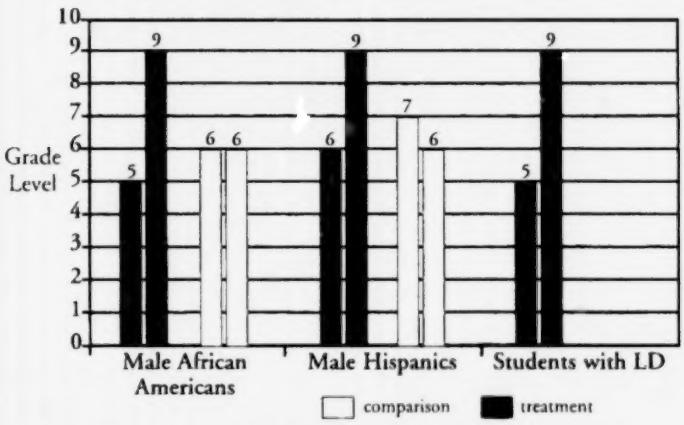
On the unexpected benefits . . .

I have so many letters from students thanking me for teaching them strategies, especially DISSECT. It makes a huge difference for students, because it gives them tools for their mental toolbox. Then they can go out there and tackle the challenges of content area classes and be successful. That's what we're trying to do: keep kids in the core curriculum, not water it down.

I also have letters from teachers thanking me. They'll say, "You made a big difference in the way I think, the way I teach, and the way I deliver instruction to students." SIM is an absolutely powerful program. It can really make a difference in the lives of students and teachers.

Word Identification Subtest, Form A. Those students who scored at least two years below grade level at the targeted high school then received intensive reading instruction (50 minutes per day for three to eight weeks) on the Word Identification Strategy. The instruction was delivered in small groups of four or five students with one teacher. Students were pulled out of their regular English class, and then returned to their regular classes after reaching mastery. These students, and the students at the comparison high school, were then post-tested using Form B of the Slossen Diagnostic Screening Test for Reading Word Identification Subtest. Results were disaggregated for demographic subgroups. **Figure 1** shows the students' pre- and post-test scores for three demographic subgroups: male African-Americans, male Hispanics, and students with disabilities. These demographic subgroups were of interest because of national data showing persistent gender and racial/ethnic gaps in reading performance (U.S. Department of Education, 2002). Comparison group scores for male African Americans and male Hispanics are also shown; students with disabilities were not tested at the comparison high school. Figure 1 shows that students who learned the Word Identification Strategy showed greater gains than demographically similar students at the comparison high school. The gains shown by students with disabilities were comparable.

Figure 1: 1998 Michigan study, High School Reading (Decoding)



Please see text for further explanation of this table.

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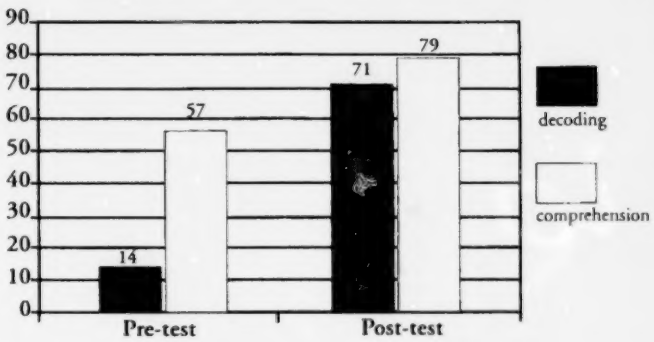
Figure 2: Kansas Study, Sixth Grade (n=78)



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Personnel at an urban school district in Kansas became aware of the results of the Michigan study, and implemented instruction in the Word Identification Strategy with a group of sixth graders in the district in 1999. District wide, entering sixth graders were tested using the Metropolitan Achievement Test, and all those scoring below the 37th percentile received 47 minutes of intensive daily instruction on the Word Identification Strategy for seven to nine weeks. Students were pulled out of their regular reading or elective classes and taught in small groups. For the remainder of the school year, students participated in monthly review sessions.

Figure 2 shows the results for 78 participating students, using two measures. The first measure is the percent of students correctly decoding at least 98% of words in a text written at the sixth grade level (dark bars) and the percentage of questions answered correctly on the Woodcock-Johnson reading comprehension test (light bars). In the post-test, students had clearly improved in both decoding and comprehension.

Conclusions

The Word Identification Strategy is effective in helping secondary students with learning disabilities to decode and identify difficult words encountered in text. By developing expertise in identifying words, students can improve their success in content-area classes and be better prepared for postsecondary education and the workplace. Teachers need additional training, however, in order to teach the strategy in the most effective manner. Training and materials for SIM are available through the Center for Research on Learning at the University of Kansas. The Word Identification Strategy manual is available only in conjunction with training by a certified SIM instructor. Additional information is available from the University of Kansas Center for Research on Learning at *http://www.ku-crl.org*.

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Web Resources

Institue for Academic Access (IAA)
http://www.academicaccess.org
This Web site, a collaborative project of the University of Kansas and the University of Oregon, has several articles about SIM in the IAA Online Library.

Southwest Educational Development Laboratory, Reading Resources
http://www.sedl.org/pubs/reading16/7.html
This site includes resources on reading research and assessment, and a link to the document, "Building Reading Proficiency at the Secondary Level: A Guide to Resources," which includes a section on word analysis strategies.

Web Resources, cont.

Strategy Instruction for Problem-Solving Unknown Words
http://www.ldonline.org/ld_indepth/teaching_techniques/ellis_unknownwords.html
This 1996 book chapter by E. S. Ellis, was originally published in Deshler, D. D., Ellis, E. S., & Lenz, B. K. (Eds.) *Teaching Adolescents with Learning Disabilities: Strategies and Methods*. Denver: Love Publishing. It has been reprinted on the LD Online Web site, and provides a detailed description of the Word Identification Strategy.

University of Kansas Center for Research on Learning
http://www.ku-crl.org
Provides information about SIM, including a brochure, newsletters, resources, and Web sites for related topics and organizations.

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